

Summary and First Report of the UMass Lowell delegation to Ireland
November 5-12, 2008

Pre-visit Delegation Objectives: In September 2008, Chancellor Meehan and Provost Abdelal hosted Dr. Gerry MacCormac of Queens University, Belfast, Northern Ireland. The purpose of the visit was to explore possible programmatic, scholarship and research collaboration between faculty and students at the respective institutions. Several academic programs and strategic priorities at Queens appeared to correspond and complement programs at UMass Lowell and included but were not limited to:

- Interdisciplinary sciences and engineering with emphasis on nano-manufacturing, bio-manufacturing and bio-technology and nanomedicine.
- Technology transfer and commercialization efforts such as the UMass Incubator and M2D2 centers.
- Sonic Arts in Music.
- Irish Studies.
- Physical Well-Being, Sports Performance and Health, and Work Environment.

A team of faculty and staff was assembled by Provost Abdelal and included:

- Dr. Ann Marie Hurley, Mathematics and team coordinator for the Ireland project.
- Dr. Francis Talty, Political Science and team coordinator.
- Dr. Susan Braunhut, Biology, ARL Biosensors Group, Nanomedicine.
- Dr. Bridgette Budhall, Plastics Engineering and Nanomanufacturing Center.
- Dr. Alex Case, Music and Professor of Sound Recording Technology.
- Dr. Stephen McCarthy, Director of Mass Medical Device Center (M2D2).

In addition to Queens University, with great assistance from Dr. Johanna Bruneau, Professor Ann Marie Hurley's daughter, a recent PhD from Trinity College Dublin and currently a post-doctoral fellow at Dublin City University, those two institutions were also contacted and arrangements were made for the U Mass Lowell delegation to visit staff and faculty at each institution in Dublin.

The objective of the team was to act as emissaries for the University of Massachusetts administration and faculty to the Ireland institutions of higher learning. The mission, resources, expertise and strategic plans for the administration and faculty of U Mass was compared to that of the visited institution and complementarities discussed openly with the leadership at each visited campus. With each institution, clear common interests were identified. Furthermore, individual faculty with areas of common interest on each campus were sought, identified and matched. In particular, the U Mass Lowell team focused on areas representing opportunities for:

1. Faculty and student exchange.
2. Research, scholarship and resource collaboration and sharing.
3. Programmatic integration and fund raising potential.

After each of the three Universities was visited, the U Mass Lowell team identified areas and individuals of research and scholarship could facilitate the above objectives.

Following this summary and first report, a detailed report with specific recommendations will describe the particular research/scholarship and personnel that the team thought satisfied this plan.

1. Queens University, Belfast (QUB)

Institutional Overview: Queens University, Belfast (QUB) is highly motivated to create a bridge for scholarship and research between the students, faculty and administration at U Mass Lowell in all subject matter. There have been major areas of growth on the QUB campus including the construction of a state of the art Cancer Institute, Physical Fitness Facility and Lab and the acquisition of Saint Mary's Teachers College. A new student dormitory village has been created to house students and visiting professors.

Historically, QUB has a world-renowned Irish studies program. There is a unique opportunity to work with, study and help the Belfast community as it actively engages in economic recovery, reconciliation and undergoes a historic conflict resolution. In the context of the continuing peace process, increased monies have been made available for programs and infrastructure to QUB by the government and private investors. There is a natural link between the communities of QUB and U Mass Lowell; Massachusetts and Belfast, Northern Ireland.

New Post-visit Insights: Two outside conditions impact on the urgency to establish and formalize an official agreement between the two institutions and the faculty of these institutions. The US government has created a research funding mechanism that through NSF and NIH will fund traditional grants (RO1; R29) but for eligibility requires a US principal investigator (PI) with a co-PI at a Northern Ireland and a co-PI at a Republic (Southern Ireland) institution. This suggests that a U Mass PI could serve as the glue for these cooperative agreements and take the lead on such a proposal. The second outside impact is the Irish government has mandated a doubling of Ph.D.s in the next five years in the areas of Science Technology Engineering and Mathematic (STEM) disciplines.

Outline of Delegate Visit: At the invitation of Pro-Vice Chancellor for Planning and External Relations, Gerry MacCormac, the U Mass Lowell delegation visited Belfast from November 6-9 2008. November 6th, PVC MacCormac and members of the QUB administration (Mr. Glenn Dickson of the QUB School of Medicine, Mr. John Thompson, Director of the QUB Knowledge Exploration Unit and Prof. Michael Alcorn, Head of the QUB School of Music) hosted a welcome dinner for the Lowell delegation at an East Belfast restaurant.

On November 7th, the U Mass Lowell delegation spent the day at QUB. For breakfast, the delegation was greeted and received an institutional orientation by Mr. Tom Collins, Director of Marketing, Recruitment and Communications, and Ms. Lynn Corken of the Queens Welcome Centre. Then Dr. Brauhn and Dr. Budhlall visited and gave presentations to faculty at the Nanomedicine center, including Dr. Glenn Dickson, and Dr. McCartney visited and gave presentations to faculty in polymer sciences including-----.

Later that day, the QUB Vice-Chancellor ----- (the equivalent of our Chancellor) greeted the delegation at a luncheon in the Vice-Chancellor's Dining Room, where a number of relevant Queens faculty and staff were introduced and shared lunch: Mrs. Norma Sinte, Director of Development and Alumni Relations (who joined us at Allen House in September), Dr. Tony McNally and Prof. Hornsby of the School of Mechanical and Aerospace Engineering and Prof. Dennis McCance, Director, Center for Cancer Research and Cell Biology. Francis Talty of the U Mass delegation was interviewed by the Irish Echo and an invitation by Mairtin O Muilleoir (Irish Echo publisher; owner, Belfast Media Group; former Sinn Féin Councillor) was extended to the entire delegation to visit West Belfast the next night, Saturday.

In the afternoon of November 7th, the U Mass Lowell team visited the Sonic Arts center and acoustic laboratories at the QUB School of Music. A demonstration of the unique 360 degree performance hall was given by the Center Director Eithne Bradley. The delegation then visited the brand new state of the art Physical Fitness facility and laboratories with a physician on staff to perform testing and athletic performance optimization and sports medicine rehabilitation. The financial support and revenue stream supporting the center and several new facilities on campus was discussed. The Lowell team was then given a tour of the new QUB Center for Cancer Research and Cell Biology and received an overview of the center's objectives and mission by its Director Dennis McCance (opened in November). The Lowell delegation was later given a tour of the QUB Medical School and its laboratories. PVC MacCormac hosted an evening concert of the Ulster Orchestra at the Belfast Waterfront Hall. On Saturday, November 8th, Gerry and a QUB driver gave the U Mass Lowell group a car tour of the Northern Coast of Ireland.

On Saturday night, Mr. Mairtin O Muilleoir provided a unique perspective by leading a visit to West Belfast, site of much of the political strife experienced prior to the Good Friday Peace Accord. Additionally, Mr. Mairtin O Muilleoir arranged a meeting with the Director (name to be inserted) of the City Center of West Belfast, a business development organization that looks to establish relationships with companies that may find Northern Ireland a suitable location; Mr. Shaun and his wife Kathy, -----, co-founder and communication director of the oldest Irish speaking primary and secondary school in East Belfast. The delegation returned to Dublin on the morning of November 9th.

2. Dublin City University (Dublin)

Institutional Overview: DCU will in the next few months open a new well-equipped Nanomedicine center. They have in the last few years opened a new research facility which houses a very large sensor group of investigators. DCU's primary interest in the next few years is to recruit more Ph.D. students and increase their funded research. They are also interested in bench to bedside translational research. They are not as interested as QUB in academic program integration.

Post visit insights: DCU has a pressing mandate to increase the research funding to pay for the occupancy of the two new buildings and double the number of Ph.Ds in STEM disciplines they must graduate. They have recruited heavily a new international faculty that do not teach, are 100% research and must meet milestones of funding to stay. The Irish government and several top, well-invested corporate partners fund them. Thus they have a set of very focused research-intensive objectives.

Outline of Delegate Visit: On November 10th, the U Mass Lowell delegation visited the campus of Dublin City University. Of particular interest was the DCU National Center for Sensor Research (NCSR). DCU arranged a series of presentations by the faculty and scientific staff of the NCSR, including: Prof. Ian Morrison, Head of the School of Biotechnology, Dr. Tia Keyes of the School of Chemical Sciences, Prof. Jens Ducree of the DCU Biomedical Diagnostics Institute and the Head of the Microsystems School of Physics, and Dr. Kim Lau, Group Projects Manager of the NCSR. Dr. Lau also had two of his post-doctoral fellows discuss their work.

From the DCU administration, Declan Raftory Director of Research, Patrick McDermott (an American from Newburyport MA), CEO of the DCU Education Trust and Prof. Brian MacCraith and Prof. Dermot Diamond, the Directors of the BDI hosted the U Mass Lowell delegation for lunch at the campus restaurant.

Coordinating the schedule and serving as point of contact for DCU was Dr. Jackie Glynn, Centre Manager of the NCSR. Dr. McCarthy met separately with the Director of INVENT, a technology transfer and commercialization specialist at DCU.

3. Center for Research on Adaptive Nanostructures and Nanodevices (CRANN) of Trinity College

Institutional Overview: Trinity College Dublin is one of the oldest universities in Ireland, founded in 1592 and is now ranked 49th in the top 100 world universities. As part of the government of Ireland's strategic plan, Trinity University was given funds to open a new research facility focused on Nanostructure and Nanodevices called CRANN.

Post-visit insights: CRANN does not have a medical school and the majority of investigators at the new facility have a strong engineering, but they do not have expertise in biology, chemistry or biomedicine. Corporate sponsorship is a leading form of continued support of the facility and Intel and Hewlett Packard scientists work in the

laboratories and side by side with researchers in the building, co-developing IP. Most of the CRANN investigators have been recruited from outside Ireland. There is some tension between investigators located within CRANN and those at Trinity. CRANN has a strong educational outreach mandate and component. The location of the facility adjacent to the train tracks is not conducive to nanostructure analysis (AMF) necessitating the construction of a new building some distance from CRANN to house some of the precision instrumentation needed by the in-house investigators.

Outline of Delegate Visit: On Tuesday November 12th, the U Mass Lowell delegation met with the staff and members of Center for Research on Adaptive Nanostructures and Nanodevices (CRANN) of Trinity College Dublin established in 2003. CRANN was built and funded by the Science Foundation Ireland, Intel and Hewlett Packard.

Ms. Keelin Murphy, Education and Outreach Manager at CRANN organized a series of presentations and meeting with the CRANN people and the U mass Lowell group, including: Prof. Marek Radowski, PI and Chair of the Trinity School of Pharmacy and Pharmaceutical Sciences; Prof. Yuri Gun'ko, PI and Professor of Chemistry; and Dr. Adriele-Mello, Research Fellow, School of Physics (a sub-2:30 Boston Marathon runner as well). Mr. Murphy also described and distributed information on the CRANN's and community education programs.

A detailed technical report summarizing the potential areas for research collaboration and student exchange, as well as recommendations and action plans for moving forward will be submitted shortly.